



PRODUCT SPECIFICATION SHEET

Dichloran Medium Base With Rose Bengal (DM1068) / Dichloran Rose Bengal Chloramphenicol (DRBC) Agar Base

Intended Use

Dichloran Rose Bengal Chloramphenicol (DRBC) Agar is used for the selective isolation and enumeration of fungi-yeasts and moulds of significance in food spoilage.

Product Summary and Explanation

Dichloran Medium Base with Rose Bengal (DRBC) is formulated as described by King et al ⁽¹⁾, which is a modification of Rose Bengal Chloramphenicol Agar⁽²⁾. DRBC is recommended for the selective isolation and enumeration of yeasts and moulds of importance in food spoilage. Dichloran inhibits spreading of moulds such as Rhizopus and Mucor and restricts colony sizes. Chloramphenicol inhibits bacterial growth (gram-negatives). Rose bengal exhibits an improved inhibitory activity at pH 5.6 and therefore the final pH of the medium is reduced to 5.6 for the inhibition of spreading fungi.⁽²⁾ Dichloran Medium Base with Rose Bengal (DRCB) is used along with Rose Bengal Chloramphenicol Agar where it is necessary to enumerate yeasts in the presence of moulds.

Principles of the Procedure

Peptic digest of animal tissue provides the nitrogen, vitamins and minerals which are essential for growth. Dextrose is the fermentable carbohydrate. Monopotassium phosphate is the buffering agent and Magnesium sulfate provides necessary trace elements. Dichloran is an antifungal agent, added to the medium to reduce colony diameters of spreading fungi. The presence of rose bengal in the medium suppresses the growth of bacteria and restricts the size and colonies of the more rapidly growing moulds. Chloramphenicol is added to inhibit the growth of bacteria present in environmental and food samples. Inhibition of growth of bacteria and restriction of spreading of more-rapidly growing moulds aids in the isolation of slow-growing fungi by preventing their overgrowth by more-rapidly growing species. Additionally Rose Bengal is taken by yeast and moulds colonies, which allows these colonies to be easily recognized and enumerated.

Formula / Liter

Ingredients	Gms / Litre
Peptic digest of animal tissue	5.00
Dextrose	10.00
Monopotassium Phosphate	1.00
Magnesium Sulfate	0.50
Rose Bengal	0.025
Dichloran	0.002
Agar	15.00
Final pH: 5.6 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

1. For Laboratory Use only.
2. TOXIC. Toxic if swallowed, inhaled, or absorbed through the skin. Irritating to eyes, skin, and respiratory
3. system. Possible risk of harm to unborn child. Possible carcinogen.
4. This medium should not be exposed to direct light as rose bengal undergoes photo-degradation leading to formation of toxic chemicals for fungi. ^(2,3)

Directions

1. Suspend 31.5 grams in 1000 ml distilled water.

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- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.
- Cool to 50°C and aseptically add sterile reconstituted contents of 1 vial of Chloramphenicol Selective Supplement (MS057).
- Mix well and pour into sterile Petri plates.

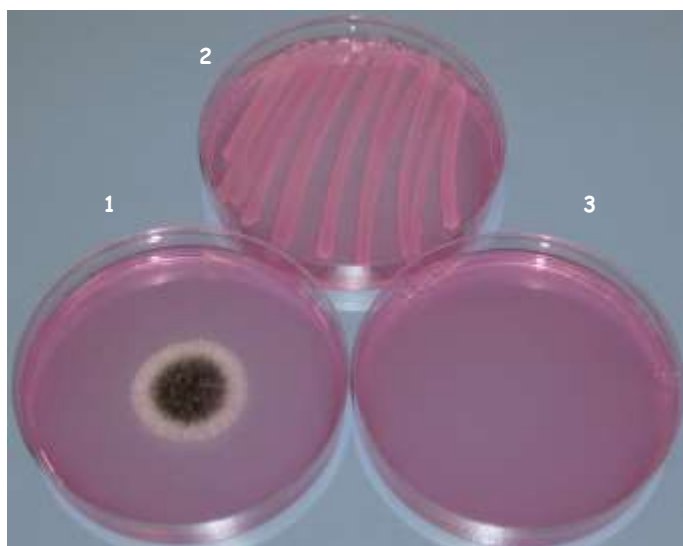
Quality Control Specifications

Dehydrated Appearance	Light Yellow to pink colored, homogeneous, free flowing powder
Solution	3.15% Solution in Distilled or deionized water is soluble on boiling, Pink colored, and very slightly to slightly opalescent.
Prepared Medium	Prepared medium is trace to slightly opalescent & Pink coloured
Reaction of 3.15% Solution	pH 5.6 ± 0.2 at 25°C
Gel Strength	Firm, compared to 1.5% Agar Gel.

Expected Cultural Response: Cultural characteristics observed with added Chloramphenicol Selective Supplement (MS057), after an incubation at 25-30°C for upto 3 - 5 days.

Sr. No.	Organisms	Results to be achieved		
		Inoculum (CFU)	Growth w/ supplement	Recovery
1.	<i>Bacillus subtilis</i> ATCC 6633	$\geq 10^3$	Inhibited	0%
2.	<i>Candida albicans</i> ATCC 10231	50 -100	Good-luxuriant	$\geq 50\%$
3.	<i>Escherichia coli</i> ATCC 25922	$\geq 10^3$	Inhibited	0%
4.	<i>Mucor racemosus</i> ATCC 42647	--	Good-luxuriant	--
5.	<i>Saccharomyces cerevisiae</i> ATCC 9763	50-100	Good-luxuriant	$\geq 50\%$
6.	<i>Aspergillus brasiliensis</i> ATCC 16404	50-100	Good-luxuriant	$\geq 50\%$

The organisms listed are the minimum that should be used for quality control testing.



Dichloran Rose Bengal Chloramphenicol (DRBC) Agar (DM1068)

- Aspergillus brasiliensis* ATCC 16404
- Candida albicans* ATCC 10231
- Escherichia coli* ATCC 25922

Test Procedure



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Add 40 ml of food sample to 200 ml of 0.1% Peptone water and shake periodically for 30 minutes ³ or process in stomacher for 30 seconds ⁴. Inoculate 0.1 ml of this sample on Dichloran Medium Base with Rose Bengal. Report the number of colonies per gram of food. Additionally refer to appropriate references in standard methods for applications using DRBC Agar Base for yeast and mold testing.

Results

Observe and record number of yeasts and/or molds present. Report as appropriate per/sample being tested.

Storage

Store sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

Expiration

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. Complete classification of yeast and molds is dependent upon microscopic observations of direct and/or slide culture preparations, along with biochemical and serological tests.
2. Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.

Packaging

Product Name : Dichloran Rose Bengal Chloramphenicol (DRBC) Agar Base /
Dichloran Medium Base with Rose Bengal

Product Code : DM1068

Available Pack sizes : 500gm

References

1. King D.A. Jr., Hocking A.D. and Pitt J.L., Dichloran-rose bengal medium for enumeration and isolation of moulds from foods, J. Appl. Environ. Microbiol., 37, 959 (1979)
2. Jarvis B., Comparison of an improved rose-bengal-chlortetracycline agar with other media for the selective isolation and enumeration of moulds and yeasts in food, J. Appl. Bact., 36, 723 (1973)
3. Sharf J.M. (Ed.), American Public Health Association, 2nd ed., New York (1966)
4. Sharp A.N., Jackson A.K., J Appl. Bact. 24, 17 (1972)

Further Information

For further information please contact your local MICROMASTER Representative.



MICROMASTER LABORATORIES PRIVATE LIMITED
Unit 38/39, Kalpataru Industrial Estate,
Off G.B. Road, Near 'R-Mall', Thane (W) - 400607. M.S. INDIA.
Ph: +91-9320126789/9833630009/9819991103
Email: sales@micromasterlab.com

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